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The phonetic transcription ability of 78 college students whose transcription instruction was administered by means of pre-programed Language Master cards was compared with that of 81 students whose instruction was non-automated. Ability was measured by seven weekly tests. There was no significant relationship on any of 29 variables with type of instruction. Intercorrelational techniques showed no positive correlation for sex, but positive correlations of grade point average and transcription and theory tests, and in four of the six Seashore Measures of Musical Abilities subtests (timbre, memory, pitch, and time). On questionnaires, students with live instruction indicated that they were significantly more satisfied (p=.05) and the main reason given was the feedback obtained from verbal imitation and the instructor's immediate critical reaction. It was concluded that live instruction be supplemented by machine practice. Three references are cited; word lists, instructions for Language Master users, satisfaction scale, grade data, and questionnaire data are provided. (Author/SN)

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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November 30, 1967

The research reported herein was performed pursuant to a grant with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Office of Education
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SUMMARY

This study was designed to compare the phonetic transcription performance of beginning phonetics students whose transcription practice was administered "live" in the classroom by the instructor with that of students who received phonetic transcription practice in a Language Laboratory via the Language Master. A basic course was programmed on Language Master Cards. Each Language Master card contained, on its reverse side, a verbal transcription in phonetic symbols of the auditory stimuli reproducable from the front of the card. Since the Language Master enables the student to record on a second channel his imitation of the auditory model, the student is afforded a means of comparing both spoken and written attempts with the appropriate auditory or visual models. In originally recording the cards, use was made of male and female voices of people in different age categories, whose voices demonstrated a wide range of quality, pitch, loudness and duration variability.

The population utilized consisted of all students enrolled in three consecutive semesters of the University of Wisconsin-Milwaukee's "Introduction to Phonetics" course. Each semester, half of the students were randomly assigned to the automated group, and half to the non-automated group. Weekly transcription tests were administered to both groups as a means of determining achievement in phonetics transcription ability.

Scores on these tests were compared, utilizing IBM data processing equipment, to ascertain whether either group's achievement, as measured by these tests, was significantly greater than the other. Intercorrelational techniques were used to isolate possible relationships of the many additional variables studied. Questionnaire data were used to augment, and possibly explain, the test findings. The questionnaire attempted to assess the students' reactions to the method of instruction.

On none of the variables studied was there a significant relationship with the type of instruction. Although the "live" classroom transcription techniques and the machine transcription practice techniques utilized in this study yielded comparable results in achievement, there were significant attitudinal differences which indicate a preference for the "live" teaching technique. It was concluded that the Language Master might profitably be used as a supplement to "live" classroom transcription practice, rather than in lieu of such teaching.

INTRODUCTION

One of the most serious problems in the education of handicapped children is that of recruiting and training the right professional personnel. High on the list of competencies necessary for effective speech correction is the "Ability to hear normal speech clearly". This competency was rated extremely high by the speech correctionists who furnished data for the Office of Education Bulletin 1957, No. 19 entitled "Speech Correctionists: The Competencies They Need for the Work They Do", (2). The present study investigated a new method for better assessing and teaching this competency.

Skill in auditory perception is an essential for improving one's own speech as well as that of others. One of the major goals of the Introduction to Phonetics course at the University of Wisconsin-Milwaukee is to train students to hear, and transcribe in written symbols, the sounds used in American English. This course is required of all students majoring in Speech Pathology and in the Teaching of the Deaf. It would seem that the ability to perceive speech sounds accurately is a mandatory requirement for many areas of exceptional education, as well as for elementary education teachers in general.

All too frequently the work necessary to help students achieve phonetic proficiency is bypassed in various curricula. It is simpler to lecture on phonetic theory and assume that the student will be able to master transcription by himself. It has been the writer's observation that such an instructional technique is unsuccessful. Most students need assistance in learning to hear sounds in context and to associate sounds with the symbols of the International (or any other) Phonetic Alphabet. If the press of numbers of students eliminates ear training instruction from basic phonetic courses due to instructional expense, one of the major benefits of such courses will be lost. Good ear training instruction demands much instructor time. Even with the use of graduate assistants to accomplish this purpose, the teaching demands remain expensive, and the teaching is not as efficient as it might be if automation were utilized.

Several methods of automation have been attempted by others in the past, but with limited success. Use of regular tape recorders, no matter how well programmed, was evaluated by the experimenter as too cumbersome for this purpose. It was believed that the Bell and Howell Language Master lends itself ideally to the teaching of basic phonetics.

It was postulated that a basic course programmed with Language Master cards would meet the following goals: (a) the use of both male and female voices as stimuli, (b) the use of voices of people in different age categories, (c) the use of voices demonstrating a wide range of quality, pitch, loudness and duration variability, (d) student access outside the classroom to dependable auditory stimuli coupled with the correct visual symbolization, (e) a series of graded instructional materials permitting students to proceed at their own pace in the laboratory, (f) the provision of immediate reinforcement--both auditory and visual, (g) ease of teaching larger numbers of students, (h) opportunity for quick-learners to free themselves from a classroom pace which deadens their interest, and (i) the freeing of a considerable amount of the instructor's classroom and office conference time from dull, routine drill.

In the light of these objectives, one can summarize by saying that the project herewith described dealt with four major problems of teaching: (a) challenging each person in a given class to work at a level and pace appropriate to his own ability, (b) freeing the instructor from routine repetitious work by means of automation, (c) devising and utilizing the most effective teaching aids conceivable, and (d) facilitating the instruction of increasing numbers of students without increasing faculty costs.

METHODS

Verbal stimuli were recorded on blank Language Master cards. The reverse side of the card contained a visual transcription, in phonetic symbols, of the auditory stimuli reproducable from the front of the card. The student can listen to the recording, and write a phonetic transcription of what he has just heard. He then has an immediate check for accuracy by referring to the reverse of the card. In the event of error, he can play the card repeatedly until he understands his transcription discrepancy. It is also possible, by utilizing the second recording channel, for the student to record his own verbal imitation of the sound stimuli appearing on the instructor channel. By appropriate manipulation of the machine's controls, he can then listen to the instructor and to himself serially and compare these sounds with each other and with the visual representation on the reverse of the card.

Fifteen units of 150 cards each, and one unit of 100 cards were prepared, each unit being of increasing difficulty--that is, each successive unit included additional sounds not previously used. The sequence for introducing sounds was arbitrarily determined by the experimenter. Initially, those consonant sounds whose symbols are identical to certain printed letters were combined with the front vowels, then with the middle vowels. The remaining consonant sounds were then introduced, followed by the back vowels and the diphthongs. The words were generated on the basis of this sequential introduction of sounds. (See appendix A for complete lists of words used.)

The use of multiple voices for Language Master stimuli was recognized as introducing an uncontrolled variable when the experiment was designed. It was reasoned that the educative desirability outweighed the factor of rigor of experimental design. The voices used ranged from the very young to the very old of both sexes. No systematic proportion of sex, age, or any given type of voice quality was sought--a variety of voices was recorded by three different recorders.

With any given unit, the student can instantaneously check his accuracy after every transcription attempt. He is his own judge of mastery of a given level. Whenever he feels that he has mastered a given unit, he proceeds to the next unit. Students were advised that if they completed one-third to one-half of the cards of any unit without error, they could assume mastery of the sounds featured in that unit. However, any continued incidence of errors would suggest the need to continue practice on the given unit.

Sequential mastery of given levels was necessary. The individual in the Langua; Laboratory had to maintain a minimal pace in anticipation of classroom activities. The spacing of the Timetable assignments permitted the students sufficient time to work through a given level before that level of skill was assumed in the classroom situation.

It must be emphasized that this automated approach was designed to satisfy solely the ear training requirements of a course in Basic Phonetics. It in no way attempted to cope with mastery of the theoretical content material of such a course.

To assess the effectiveness of the Language Master teaching technique, an experimental "automated" group was compared with a control group whose transcription training was not automated. Each semester the students in the University of Wisconsin-Milwaukee's "Introduction to Phonetics" class were randomly assigned to two groups--half of the students to the laboratory for automated transcription practice, and the other half to the classroom group which received "live" transcription practice (i.e., words were orally presented by the instructor with neither electronic amplification nor the use of aids such as language masters or tape recorders).

Students were informed that class size required that half of the students learn their transcription skills in the Language Laboratory. The instructor did not suggest the possibility of transfer from one group to the other. Accordingly, very few transfers were made, and then only because of hardship with respect to working schedules.

Members of the experimental group were given instruction in the use of the Language Master by the experimenter. The "Instructions for Language Master Users", a copy of which comprises Appendix B, were in the students' hands when use of the machine was demonstrated. The students kept copies of the instructions for their individual use.

Extending the experiment over the duration of several semesters posed a problem of equal or equivalent testing devices. The same tests were used for each of the three successive semesters, and tests were not returned to the students. The instructor attempted to meet the criticism of lack of feedback on errors by discussing, after each test was graded, the errors made most frequently by the entire class.

Data were collected in the experimenter's Phonetics class during the three-semester period beginning in February 1966 and ending in June 1967. Each semester, approximately one quarter of the total number of class hours in the Basic Phonetics course was devoted to classroom transcription practice. The members of the experimental group were excused from class on these days and were free to pursue in the Language Laboratory as much or as little transcription practice as they chose.

Three Language Masters and three complete sets of cards were available for approximately five hours daily, five days a week. The

experimental groups numbered 30, 23, and 26 for the three successive semesters of the experiment. There were few reports of difficulty of access to the machines throughout the period of the experiment.

Strict attendance was kept in the classroom practice sessions, and the members of the machine group were required to record the total amount of time spent each time they used the Language Masters in the Language Laboratory, thereby making available a measure of total time spent in transcription practice.

All students had a semester's Timetable of Course Activities which clearly related the day-by-day minimal progress required on the machine transcription practice units to the sequence of classroom lectures and the testing schedule.

The criterion measures of phonetic transcription ability were afforded by seven twenty-word transcription tests, given at 7- to 12-day intervals during the first two-thirds of the course. Each test consisted of words incorporating the sounds featured in the immediately preceding classroom transcription practice session (control group), or the comparable machine units (experimental group). The tests included no words utilized in practice--classroom or laboratory. Monosyllabic words were presented once; most polysyllabic words were given twice. Occasionally a word incorporating difficult sound sequences was given three times. Scoring of tests was done on a whole word, rather than an individual sound basis--i.e., if a test item was not completely correct, it was scored as an error. The achievement measures used did not extend to the nonsense word and sentence transcription activities of the final third of the course.

Three tests which covered the total content material of the course yielded the "Theory" test criterion measures. In addition to the seven transcription test scores and the three theory tests, scores were obtained within the first two weeks of the course for each student on the six subtests of the Seashore Measures of Musical Talents (New York: The Psychological Corporation).

The experimental and control groups were compared for phonetic achievement, as well as for student satisfaction--as measured by an instructor-devised Satisfaction Scale. The Questionnaire yielding this Satisfaction Score was filled out by each student during the final week of the course. A copy of the complete Questionnaire appears in Appendix C.

The data were further analyzed for sex differences, as well as for possible differences related to students' grade point average, academic majors, and amount of time spent in transcription practice. In addition, phonetic achievement was studied in relationship to scores obtained on the Seashore Measures of Musical Abilities.

The Seashore test was dubbed onto tape by commercial-calibre recording equipment. When administering the test, the tape was played

on a Sony model number TC 102 portable tape recorder. Model number 711B portable Language Masters were used with matched headphone sets--Clevite Brush Educational Headphones, model number ED-300.

Data were analyzed utilizing IBM 1620 data processing equipment. Intercorrelations were run on each of the 30 variables in the Grade Data analysis, and each of the 35 variables in the Questionnaire Data analysis. The Phi coefficients for the dichotomous variables of sex, teaching technique (machine-non-machine), and course requirement were utilized in evaluating group differences by means of the Walker and Lev Chi-square formula 11.26 (3).

The originally-contemplated interviewing of course dropouts (to ascertain reasons for withdrawing from the course) was abandoned because of an insufficient number of such dropouts.

RESULTS

GRADE DATA

Complete intercorrelation tables appear in Appendix D.

Sex

The sample population differed by sex as follows: Of the 159 subjects, 30 percent were male. Significantly more males (1% level) majored in General Speech and in Radio-TV; significantly more females (1% level) majored in Speech Correction and in Deaf Education.

The only significant sex differences in phonetic achievement, as measured by the Chi-square test, were higher grades for Females on the First Theory test (Theta = -.22) and the second transcription test (Theta = -.21). These differences, significant at the one percent level, disappeared with successive testing of both transcription and theory.

Machine versus Non-machine

On none of the other 29 variables was there a significant relationship with the type of instruction.

Grade Point Average

The data conclusively demonstrate a relationship between Grade Point Average and both transcription and theory test scores, with the relationship being stronger for the theory tests. For the transcription tests (in chronological sequence) and the transcription average score, product moment correlation values were: .31, .32, .34, .35, .30, .25, .35 and .38. Correlations of the three theory tests and the theory average with grade point average were: .34, .44, .45 and .48.

The only other significant relationship with Grade Point Average was a positive one (r = .26) with the Seashore Time subtest. None of the other Seashore subtests were significantly related to Grade Point Average.

Time Spent in Transcription Practice

There was no significant relationship between time spent in transcription and any of the other variables.

Transcription and Theory Test Data

Transcription test intercorrelations ranged from r = .57 to r = .77. These data suggest consistency in achievement. By viewing these same correlations as test-retest reliability coefficients, these high correlations would alternately suggest consistency of measurement of the Transcription Tests.

Intercorrelations of the three theory tests, ranging from r = .54 to r = .65, further suggest, as do the transcription test data, consistency of test measurement or of student achievement.

All correlations of each Transcription Test with each Theory Test were significant, ranging from r = .22 to r = .43, further suggesting relative consistency of student achievement--whether measured by means of transcription or of theory tests.

Seashore Scores

Scores on the Seashore Timbre and Tonal Memory subtests were significantly related (1% level) to scores obtained on each of the seven transcription tests. Similarly, a strong relationship existed between Pitch and transcription and Time and transcription, with one of the Pitch and two of the Time correlations being significant at the 5% level--the remainder being significant at the 1% level. The Loudness and Rhythm subtests showed no significant correlation with phonetic transcription scores.

None of the Seashore subtest scores correlated significantly with scores on any of the Theory tests.

It might be noted that each of the four Seashore subtests which correlated significantly with transcription was significantly intercorrelated, contrary to the claims of the test's originator.

Students' Majors

No strong trends were apparent in an analysis of the data grouped according to students' majors. The one exception--consistently significant negative correlations for transcription by Communication and Public Address majors--is probably due to a sampling bias (N = 1), and hence is not to be construed as a valid indication for this major group.

QUESTIONNAIRE DATA

Complete intercorrelation tables appear in Appendix E.

Sex

Analysis by sex revealed no differences significant at the five percent level in "Satisfaction".

Machine versus Non-machine

The questionnaire revealed differences in Study Satisfaction between the machine and non-machine groups. The average score of the twelve "Satisfaction" questions was significantly higher (five percent level) for the non-machine group, indicating a greater overall degree of satisfaction for this group, as measured by the Satisfaction Scale.

The non-machine group also scored significantly higher (Chi-square at the one percent level) on Satisfaction Questions 5, 6 and 8; the groups did not differ on Satisfaction Questions 1, 2, 3, 4, 7, 9, 10, 11 and 12.

"Declared"* Grade Point Average

*-Since the Questionnaires were not signed, the grade points associated with the Questionnaire data, unlike the Registrar's Office's actual grade point averages used in connection with the "Grade Data" analysis, are designated "Declared Grade Point Average" (DGPA).

Declared Grade Point Average and Age

DGPA was significantly correlated (1% level) with age, the older students having higher Grade Point Averages. Age did not correlate significantly with any of the other variables.

Declared Grade Point Average and Satisfaction

While DGPA apparently had no differentiating effect with respect to any of the satisfaction scores specific to this experiment, it did bear a relationship to items one, two and three (study by oneself, self-operated electronic teaching aids, and use of earphones in learning sessions). In each of these items, higher DGPA was significantly related (5% level) to greater satisfaction.

"Preference" Data

The only additional significant relationship noted on the Questionnaire data with respect to preferred learning technique (language lab vs classroom) was the relationship to end-of-the-course attitudes identified as "Present Choice" of technique. The machine group indicated a significantly greater (1% level)

preference for the Language Master technique at the course's end. (r = .30). This preference was not significant on the question which dealt with their presumed teaching preference at the beginning of the course (without the insight gained through a semester's attempt to learn phonetic transcription.)

Satisfaction Data

An analysis of the intercorrelations of the twelve "Satisfaction" scores reveals that item one (studying by oneself) and item eleven (phonetic transcription motivation level at the beginning of the course) failed to correlate significantly (at the 5% level) with any of the other Satisfaction Scores. Of the intercorrelations of the ten remaining Satisfaction scores, more than half were significant, with the most powerful relationship existing between number two (use of self-operated electronic teaching aids) and both three (use of earphones)--r = .62, and four (use of the Language Master)--r = .73.

The next strongest cluster of intercorrelations exists between number 5 (clarity of articulation of transcription stimuli) and the following: number 8 (student imitation of the stimuli and consequent check thereof)--r = .46, number 6 (variety of dictation stimuli)--r = .41, number 7 (checking of transcription practice accuracy)--r = .22, and number 10 (relationship of transcription practice sessions to other classroom activities)-- r = .23.

Of lesser strength, significant correlations exist between number 7 (checking of transcription practice accuracy) and the following Satisfaction Scores: number 2 (use of self-operated electronic teaching aids)--r = .21, number 3 (use of earphones) --r = .25, number 4 (use of the Language Master)--r = .33, number 5 (clarity of articulation of transcription stimuli)-- r = .22, and number 6 (variety of dictation stimuli)--r = .25.

Satisfaction Score number 6 (variety of dictation stimuli) correlated significantly with four other Satisfaction scores: with number 7 (method of checking transcription practice accuracy)--r = .25, number 8 (checking of verbal imitation of the stimuli)--r = .34, number 10 (relationship of transcription practice scheduling to other classroom activities)--r = .28 and number 12 (transcription motivation level at the end of the course)--r = .21.

None of the correlations with transcription motivation level at the beginning of the course was significant at the five percent level. However, transcription motivation level at the end of the course correlated significantly (1% level) with Satisfaction Scores 6 (r = .21), 7 (r = .22), 9 (r = .26), 10 (r = .30) and the average of the 12 satisfaction scores (r = .48).

School Major

None of the school major groups differed significantly from each other on Satisfaction Scores.

Present Choice; Initial Choice ("Preference")

Both the present choice of teaching technique and the choice reported as operable at the beginning of the course demonstrated a significant correlation (1% level) between the Language Master group and Satisfaction questions 2, 3 and 4. On the other hand a significant instructor-classroom relationship (5% level) with satisfaction questions 5 and 8 was obtained at the end of the semester. This relationship was not apparent on analysis of presumed attitudes at the beginning of the course.

In studying the unstructured questionnaire comments, certain reactions to the two systems become immediately apparent. The most overwhelming prevalent reaction from the open-end questions was the preference for classroom dictation practice because it affords an opportunity for constructive criticism, an immediate reaction to transcription errors. While it was recognized that the machine makes one aware immediately of his mistakes, the students commented that it cannot tell WHY the error was made, nor compare it with the correct stimuli and other error possibilities. The other major reasons for classroom dictation preference centered around the motivational aspects of a good instructor-student relationship, comparison and competition with other students, and the enjoyment of learning with others. Additionally, the help of visual cues was listed as a benefit of "live" transcription. Negative reasons for classroom preference centered mainly around an expressed dislike--even a hatred--of machines, plus being bored by machines.

The most frequently cited reasons for preferring the machine learning technique were that (1) it afforded more practice time and practice materials, (2) it permitted one to work at his own pace, (3) it had the advantage of using many voices as stimuli, and (4) it avoids the embarrassment aspect of making mistakes before a classroom of one's peers.

DISCUSSION

The data conclusively demonstrate a relationship between Grade Point Average and both transcription and theory test scores, with the relationship being stronger for the theory tests. The significant product moment correlation values were in the thirties for the transcription, and in the forties for the theory tests, indicating that students with higher overall academic achievement achieve better in both phonetic transcription and theory tests than do students of lesser achievement. There were no significant sex differences in the measures of phonetic achievement, nor differences related to students' academic majors, age, or time spent in transcription practice.

It is similarly apparent that either the students were consistent in their achievement on both types of phonetics tests, or that the two sets of tests (transcription and theory) were consistent measures of what they purported to measure.

The significant relationship of four of the six Seashore subtests (i.e., Timbre, Tonal Memory, Pitch and Time) to transcription ability reconfirms data previously reported by Pickler and Leutenegger (1). However, none of the Seashore subtest scores correlated significantly with scores on any of the Theory tests.

Analysis of the Questionnaire data revealed no significant sex, age, grade point, or school major differences with respect to Satisfaction Scores. However, although the experimental and control groups did not differ in phonetic achievement, significant differences did exist between these groups on certain Satisfaction measures. The control group scored significantly higher (Chi-square at the one percent level) on clarity and variety of transcription stimuli, as well as the checking of students' verbal imitation of the stimuli.

The first of these aspects--clarity--might be related either to perceived poor quality of the Language Master stimuli, or the actual superiority of the instructor's verbal stimuli. The instructor frequently was told by members of the machine group that many of the Language Master cards (particularly of those assumed to be children's voices) were difficult to understand because of the poor articulation of the recorded subjects. In the classroom apparently, articulation posed little or no problem.

The second factor--variety--is somewhat more difficult to interpret. It was a basic assumption that the variety of different voices

made possible by the machine approach would be preferable to the classroom's instructor-only* stimuli, and would lead to better

*The teaching methods used by the experimenter do include the use of students as stimuli, but normally student-dictation occurs toward the end of the course--too late to have any influence on the weekly transcription test grades which supplied the achievement scores for this study.

learning. Apparently the students objected to this variety of stimuli, preferring the single instructor's voice. This would suggest the desirability of testing whether or not the use of a single voice as Language-Master stimuli, particularly in the beginning of transcription training, results in improved learning and/or improved attitudes.

The significant results on Satisfaction question number 8 yield strong evidence for the desirability of maintaining "live" classroom phonetic transcription instruction. The control group was significantly more satisfied with receiving instructor-reaction to classroom verbal imitation than was the machine group with its method of comparing their own imitation of the stimulus with that on the instructor-channel. As foreign language instructors have discovered in using audio-lingual techniques of laboratory instruction, their students tend to verbalize aloud while listening to the stimuli. If verbalization and acoustic perception travel hand in hand, then an immediate, reassuring, satisfactory method of critical reaction to the verbalization seems desirable. This function apparently was better met in the present investigator's classroom than through the alternate language laboratory technique devised to serve a similar purpose.

Further instructional clues may be derived from noting those Satisfaction Scores which correlated significantly (1% level) with phonetic transcription motivation level at the end of the course. These were Satisfaction Scores 6, 7, 9 and 10. These relationships suggest that (1) the total integration of the course"s transcription practice with classroom lectures and discussion (as well as the time allotted to transcription), (2) the perceived variety of dictation stimuli, and (3) the checking of transcription practice accuracy, are all closely related to the students' motivation level at the end of the course with respect to transcription.

The present experiment was so designed that there was no diminution in amount of classroom drill time. However, student demand for office conference time for drill purposes was almost non-existent during the experiment. This was in stark contrast to the instructor's previous experience of excessive demands by students for additional transcription practice. While it was also evident that the quick learners in the experimental group spent less time in practice than they would have if they had attended the classroom transcription sessions, the actual probing of phonetics in greater depth with the time thus saved depends, to a great extent, upon the skill and motivational abilities of the instructor.

CONCLUSIONS AND IMPLICATIONS

Although the "live" classroom transcription techniques and the machine transcription practice techniques utilized in this study yielded comparable results in achievement, there were significant attitudinal differences which indicate a preference for the "live" teaching technique.

While it is possible to conclude from this study that, since achievement was the same for both the "live" instruction and the Language Master transcription practice techniques one can convert to machine instruction, this equivalence of results may differ with different instructors or with different students.

Granted one's willingness to equate the teaching effectiveness of this particular instructor with other phonetics instructors, and granted that this sample of students was in no significant way atypical, one's willingness to convert to machine instruction ought still to be tempered by the revealed attitudes toward the use of the Language Master for this purpose. If one is responsive to student attitudes and learning "satisfactions", this study suggests that complete conversion to the machine is not in the best of pedagogical interests. A more defensible course of action would be to continue live dictation practice and augment it with Language Master practice. Until a machine can be programmed to tell the student WHY he made an error, it would seem unwise to convert entirely to the machine technique.

The other seemingly most potent contraindication for exclusive machine instruction in this type of learning is the aspect of verbal imitation and instructor-reaction to such imitation. If there is a motor verbalization component to acoustic perception, the student imitation aspect of phonetics instruction might be the most important reason for maintaining live classroom teaching which will capitalize on this technique.

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APPENDIX A

Unit I Word Lists

breeze	speed	slip
lead	sneak	squid
reek	free	rid
D.D.T.	leaped	rip
sealed	skis	skip
team	cleans	list
heap	skim	spirit
gleam	vim	repeal
trill	blimp	repeat
imprint	pin	elite
quit	sin	sneaky
inflict	been	reveal
liquid	bid	easily
cream	bit	edict
creep	hit	seated
bleet	skit	seeded
squeeze	knit	weary
read	bib	tinny
reap	pill	simply
east	till	retrieve
queen	kill	recede
fleeced	mill	prefix
eve	sill	precede
plead	will	pixy
neat	big	Pigmy
weak	squib	leaflet
Swede	skill	hilly
steal	rim	discreet
steed	lip	history
squeal	flip	ditty
sleet	clip	release
treat	skinned	easy
least	kin	secret
league	skimp	seasick
tweeds	fin	tipsy
creased	tin	sixty
bleed	did	sickly
squeak	lid	retreat
scheme	sit	restrict
ream	kits	quickly
ease	mitt	prickly
feast	kid	pleases
cleats	rib	pieces
lease	bill	leafy
cleave	dill	receive
please	gills	receipt
weave	fill	indiscreet
priest	hill	Dixie
sweet	milk	increase
steep	zip	hill-billy

Unit II Word Lists

fell	namesake	vestry
head	Spain	ace
pen	zany	ale
sell	ably	ape
well	aces	flame
let	babies	vague
wet	debates	vain
get	namely	fame
text	naked	hate
dead	beefsteak	game
fed	maid	brain
led	wade	gale
bread	make	nail
less	sake	wail
twelve	cane	vase
rest	lane	lace
west	brace	bait
prairie	babes	mate
fairy	bait	fate
sentry	paint	wait
red	stale	dame
bell	prayed	lame
ten	blaze	tape
bet	Maine	baste
net	erase	haste
pet	tasty	ache
Ned	daily	aim
said	lady	ate
wed	basic	skein
mess	crazy	veil
deb	hatred	blame
blend	midway	name
dregs	vacated	main
best	pensive	same
blessed	envy	pain
exit	prevent	break
dairy	lettuce	tail
nest egg	pretext	mail
tennis	epic	fail
paid	hairlip	hail
raid	invest	pace
fake	Venice	face
lake	belly	race
rake	event	gait
sane	T.N.T.	rate
skates	any	tame
daybreak	airy	came
caved	headache	paste
drain	festive	waste
praise	vexes	

Unit III Word Lists

acts	gal	alley
an	tag	anvil
and	lag	Aztec
as	tap	access
asp	gap	ad-lib
blast	sap	abbey
bass	rap	abscess
cat	tack	accent
fat	lamb	backspace
mat	knack	acquiesce
spat	lack	actress
sat	dam	addict
cabs	ham	adventive
dabbed	pan	amply
nab	tan	bed pan
at	can	antacid
padded	fan	ballet
dad	ran	basset
mad	sand	tablet
had	handicap	napkin
lad	backhand	candid
gas	bandstand	family
bag	bactine	lattice
gag	accent	track
sag	bracket	tranquil
rag	canteen	lax
cap	candy	valve
nap	active	massive
lap	address	panic
back	antique	traffic
am	assets	vaccine
add	racquet	asked
ant	abnigate	accede
hat	sack	access
black	rack	brasswear
camp	tam	acrid
bat	ram	added
gnat	ban	agate
pat	dance	ancestry
rat	man	anise
vat	van	baggy
tab	laugh	bandit
clad	hand	basket
fab	abstract	rapidly
pal	rant	narrate
bad	captain	extract
cad	classic	taxicab
fads	annex	grand
sad	canny	vast
pass	campaign	rabbit

Unit IV Word Lists

numb	tufted	militant
pluck	cultivate	complexity
crust	fund	secondly
rust	punt	midland
mullet	dumb	extra
bucket	gruff	fantasy
drugs	loved	random
sunny	bluff	incapacitated
gust	must	plasticity
stuck	cuff	acclimate
mutt	acidity	laxative
up	adept	eleven
erupt	acquaintance	Tennessee
bloody	abacus	attractive
husky	ability	villain
trusty	abstain	central
money	magazine	taffeta
bucks	academic	conceive
duck	accessory	conflict
bust	fatigue	compel
abduct	dividend	complicity
bugged	bacon	condense
bud	breakfast	memory
trust	peninsula	frivolous
gun	poligamy	abstinence
truss	epigram	ransom
dove	cigarette	trustee
fussy	petite	blasphemous
skull	bigot	appendix
fund	umbrella	paprika
trust	patron	calcium
puff	address	assimilated
crumb	acquaint	validated
stump	addict	ventral
pup	abandon	veterinary
ugly	abbreviate	technicality
truck	abstinence	conceit
but	madras	company
funny	academy	compress
front	acclaim	confederate
bunt	African	abrupt
mummy	galaxy	abundance
fluffy	instance	accompany
muff	penetrate	custody
stuff	epilepsy	cutaway
fuzz	epidemic	husband
snuff	statistic	fulcrum
lumps	mademoiselle	compass
pus	bigamist	rhumba
puppet	convene	corrupt

Unit V Word Lists

actor
accursed
after
administrator
answer
averse
absurd
bewilder
better
burnt
burr
butter
crackers
circus
character
center
concern
clerk
consider
curl
converse
currant
cumbersome
curse
cluster
cover
color
current
disturbed
discover
diversity
defer
difference
dinner
dirty
demur
dessert
early
effort
earn
earnest
eager
editor
exert
ever
entwirl
ferment
first
fern
favor

fluster
fur
fervid
furtive
girl
grammar
greater
hamburger
hazard
hammer
her
heard
herself
immerse
instructor
interpret
irk
inert
incur
impervious
liquor
later
learn
leopard
letters
lurk
matter
master
mercenary
murder
number
nurse
neighbors
never
plaster
pattern
paper
perhaps
perfect
permit
person
prefer
permanent
purse
purr
personality
pursuade
personnel
purpose
perplex

persist
remember
rehearse
return
reader
rubber
record
reverberate
revert
skirt
supper
serve
suffer
sir
sweater
slur
surpass
survey
sister
smugler
squirmed
stutterer
scissors
swerve
surfeit
surplus
service
squirt
stern
spurt
speaker
standard
sermon
term
turnips
turf
terminate
turban
taster
tractor
under
unfurled
verse
waiter
were
word
worker
worse
winter
world

Unit VI Word Lists

dribble
middle
handle
paddle
cradle
ladle
funnel
stubble
beatles
pickel
tattle
staple
dapple
pebble
animal
sickle
castle
kennel
temple
temperamental
technical
circle
battle
symbol
panel
curdle
metal
sandal
saddle
fatal
little
rubble
riddle
fickle
inflexable
stable
rebel
cannibal
scramble
smuggle
regal
principle
symmetrical
rattle
gamble
camel
mantle
ramble
cable
nibble

accidentally
ample
muddle
turtle
preamble
purple
reasonable
pedal
humble
cuddle
fertile
hurdle
triple
ripple
penalty
puzzle
bundle
huddle
tumble
bubble
bagel
apple
table
accelerable
syllable
heckle
puddle
tunnel
fumble
couple
catalyst
pimple
madrigal
hurtle
pencil
capsule
muzzle
kindle
subtle
crumble
stumble
rustle
ripple
baffle
trundle
stable
bramble
incredible
fizzle
sniffle

battle
huckleberry
knuckle
gurgle
label
sample
muscle
simpleton
chasm
imperialism
cannibalism
feminism
skepticism
hypnotism
asceticism
spasm
prism
anachronism
literalism
fatalism
criticism
liberalism
conservatism
absence
medicine
personal
listen
brazen
hasten
mitten
straighten
sudden
maiden
reason
skeleton
vixen
person
antecedence
bacon
raisin
fasten
prison
written
smitten
venison
laden
Madison
madden
season
Aladdin

Unit VII Word Lists

reading
sang
swing
bringing
tongue
blank
spunk
fungus
tanker
finger
anger
sphincter
sanguine
uncle
meaning
singer
eating
banged
hanger
hunger
angle
drunk
distinct
flunk
anchor
lynx
linger
cleaning
winking
tingles
flinging
mingling
singled
tinkling
among
inkling
strangle
mangle
drinker
angry
trapping
visiting
suffering
painting
spending
straining
beginning
living
languid
willing

angler
ankle
anklet
bankrupt
banquet
bedding
sprinkle
blanket
blessing
bracing
brink
bungle
butterfingers
cantankerous
casing
clearing
crank
wrinkle
trinket
cutting
wringing
saving
delivering
disgusting
drilling
drinkable
dwelling
earnings
sibling
pink
filtering
fingernail
fitting
flunk
frankfurter
frankincense
hamstring
steering
tearing
herring
hummingbird
Hungary
inkwell
instinct
interesting
tingle
link
intermingle
kindling
kink

larynx
leasing
lingual
linguist
malinger
manganese
meringue
misgiving
monk
mustang
nestling
rectangle
periwinkle
pharynx
plank
precinct
rambling
rancor
rank
ringlet
ringworm
resisting
sanctify
sapling
seedling
simmering
skiing
skunk
spangle
springer
sprinkling
spunk
standing
sterling
strangle
swank
syncopate
tangle
tankard
tumbling
tungsten
twinkling
unavailing
unbecoming
unceasing
uncomplaining
underpinning
unending
wedding
zinc

Unit VIII Word Lists

girth
worth
birth
eleventh
twelfth
seventeenth
sixtieth
hundredth
aftermath
beneath
bequeath
depth
health
labyrinth
mammoth
fifth
sixth
length
stealth
strength
underneath
unearth
wealth
worth
zenith
threat
thread
thankful
threaten
thrift
thrill
thrifty
thrust
nothingness
panther
parenthesis
pathetic
philanthropy
plaything
rhythmic
scathing
smithy
southernly
stealthy
stepmother
strengthen
systhesis
synthetic
thankfulness
unearthly

unfaithful
unfathomable
unhealthy
unthinkable
wealthy
weather
telepathy
wither
withheld
withstand
worthily
wrathful
teeth
wreath
bathe
with
months
tenth
seventh
seethe
breathe
math
thank
theme
think
them
that
these
thus
thicket
thesis
thankless
thanksgiving
theater
theft
themselves
theory
therapy
thermal
thicket
thicken
thickening
thief
thimble
thereafter
thinker
thirst
thirteen
thistle
thumbtack

thump
thundering
third
theatrical
thirteenth
theatrical
thistle
ether
teething
leather
nothing
healthy
something
earthquake
arithmetic
breathing
another
brother
rather
feather
weather
withstand
lather
rhythm
zither
aesthetic
mathematics
anthem
athlete
athletic
bathtub
birthday
breathless
brethren
brotherly
diphtheria
earthen
earthworm
ethical
everything
faithless
fathom
filthiness
further
grandmother
lengthen
method
heathen
mythical
naphtha

Unit IX Word Lists

shackle	apparition	collision
Shakespeare	application	amnesia
shall	apprehension	pleasurable
sham	attache	lesion
shame	aviation	abrasion
shank	benefaction	anesthesia
Shantung	calibration	aphasia
shapely	caption	evasion
share	cashier	excision
Shakespearean	machete	fantasia
sheath	machinery	negligee
sheathed	nationality	prestige
sheepherder	decapitation	occasion
sheepshank	classification	invasion
sheepshearing	compression	inversion
sheepshed	crushing	Persian
shelves	direction	incision
shellac	dispensation	decision
shellfish	elaboration	revision
sherbet	fissure	division
shibboleth	impressionistic	derision
shillelagh	impression	aversion
shindig	plantation	excursion
shingle	mention	conversion
shipbuilder	vacation	version
shipshape	official	provision
shirk	permission	displeasure
shivaree	animation	persuasion
shovel	manifestation	collision
shrank	gash	dissuasion
shrapnel	thrush	diversion
shrimp	crash	aspersion
shrunk	mush	introversion
shuffle	garish	perversion
shunt	blemish	reversion
champagne	calabash	subversion
chagrin	flourish	indecision
charade	radish	precision
chassis	sheathing	subdivision
chanille	beige	television
Chevrolet	leisure	shilling
abstention	pleasure	shrift
abstraction	vision	shrug
academician	azure	adumbration
acceleration	adhesion	appellation
activation	seizure	cachet
adaptation	displeasure	national
adoration	treasure	deflationary
amalgamation	measure	blush
anxious	decision	gnash

Unit X Word Lists

chill	church	badge
children	leech	cage
changeable	speech	sage
chubby	teach	page
chimpanzee	reach	edge
chunk	impeach	stage
chant	peach	strange
cheese	touch	arrange
cheek	much	pledge
cheep	hatch	manage
chief	match	damage
chip	patch	rummage
chicken	unlatch	pitcher
chin	attach	pasture
chain	Dutch	preacher
check	search	impeachment
chess	birch	stiches
chest	research	teacher
chaplin	perch	question
channel	catch	chinchilla
chipmunk	fetch	catcher
chamber	rich	purchase
chap	witch	handkerchief
chancellor	ditch	satchel
jab	batch	picture
jag	beach	branches
jam	krutch	kitchen
janitor	dispatch	feature
Japan	latch	puncture
Jasmine	stench	pigeon
jerk	trench	judgement
jettison	wrench	engine
journal	pinch	dungeon
juggle	punch	reject
jagged	bunch	magic
jel	drench	midget
jangle	bench	fragil
javelin	Klentch	frigid
general	scratch	digit
justice	judge	fidget
junction	fudge	diligence
jingle	nudge	diligent
jungle	sponge	negligible
Germany	trudge	readjust
junk	ledge	register
each	dredge	refrigerate
inch	hedge	regenerate
itch	wedge	regiment
thatch	smudge	region
belch	grudge	engagement

Unit XI Word Lists

battalion
billiard
brilliant
bunion
calculus
consecutive
circular
canyon
companion
civilian
dahlia
east
fabulous
failure
familiar
granulate
inconvenience
million
minion
onion
pavilion
regular
scallion
speculate
senior
spaniard
scapula
stallion
trillion
Virginia
valiant
vineyard
yankee
yank
Yale
yams
yet
yearn
yeast
Yiddish
yanking
yearling
youngster
yes
yelled
yen
yielded
younger
yelk
young

whack
whale
wheat
wheedle
wheel
wheel-chair
wheeze
whelk
whelp
when
whence
whenever
where
whereas
whereat
wherein
whereunder
wherever
wherewith
whet
whether
which
whiff
whiffle
whig
whim
whimper
whimsical
whinny
whiplash
whippet
whippoorwill
whir
whirl
whirligig
whirlwind
whisk
whiskers
whisky
whisper
whistle
whistler
whither
whiz
anywhere
awhirl
elsewhere
everywhere
somewhat
somehwere

Unit XII Word Lists

wooed
wood
could
cooed
should
soot
foot
hood
boot
loot
root
roof
toot
goof
music
student
room
rule
use
value
improve
super
hoot
canoe
illusion
crucifix
papoose
seclusion
thumbscrew
to
include
choose
intrude
pupil
communicate
education
human
value
few
fuse
humor
enthusiasm
spew
you
sure
habitual
suit
mute
lute
refute

cute
breadfruit
souvenir
underwood
bosom
graduation
poor
pudding
news
immune
soon
good
ooze
book
school
suitable
community
loop
coop
insure
through
true
unit
delude
deluge
wistful
insecure
priesthood
jury
trayful
centrifugal
frugal
usual
individual
attribute
introduce
attitude
altitude
continue
evaluate
diffuse
presume
move
took
snoop
snooze
rueful
playful
textbook
bookworm

fretful
would
zoo
whom
look
cook
book
sinew
punctuation
usually
allusion
beautiful
moon
ridicule
mood
cool
fool
food
university
numerous
curfew
crude
cuckoo
glue
goodness
looking
lurid
pool
stewed
stood
shoed
shook
June
albumen
aloof
move
produce
schooner
racoon
dispute
blue
boon
soothe
tutor
boom
union
tumult
refuse
peculiar
mute

Unit XIII Word Lists

longevity
fiasco
photostats
launch
coagulate
yogi
yawn
paunch
paltry
diphthong
augment
absorb
accordion
zero
profession
orphan
offered
tobacco
enormous
talked
allophone
plosives
phoneme
telephone
songs
albatross
alderman
allegoric
almanac
alteration
alternate
altogether
anecdote
antelope
antidote
alimony
epilogue
approach
appropriate
sparrow
associate
atrocious
auburn
auction
audacious
austere
authentic
authority
autism
auxiliary

blowtorch
bolero
bonanza
broadcloth
brokerage
buffalo
bulldog
bungalow
bureau
cajole
cameo
catacomb
category
cathode
cello
chaperon
chauffeur
cirrhosis
claustrophobia
cloakroom
closure
coalition
coeducation
coerce
cohesion
conservatory
copious
composure
concerto
cornea
cornucopia
corollary
corporation
corpuscle
correlation
cortex
crochet
crowfoot
curie
deodorant
discompose
dishcloth
dislocate
dissociate
dogwood
dormitory
drawbridge
odius
omission
orchestra

ordinary
origin
ovation
raucous
egocentric
elongate
embryo
exposure
jaundice
yogi
zodiac
fiasco
flamingo
forceps
forecast
forge
formality
formation
formidable
formula
fortification
fortitude
gigolo
gladiola
glaucoma
gringo
halitosis
headlong
heroic
hormone
horoscope
lawyer
locomotion
logarithm
majority
maudlin
misnomer
mistletoe
mortgage
nausea
nautical
nomenclature
normal
notation
quart
quotation
quotient
pagoda
periscope
phonemic

Unit XIV Word Lists

doctor
doctrine
documentary
dodge
domineer
dossier
quadrangle
qualm
quantum
quatrain
abolish
adagio
adopt
anomaly
anthology
apothecary
arboretum
archaeology
archaic
archduke
argue
armful
artichoke
articulate
autonomic
autopsy
jargon
jodhpurs
jonquil
josh
jostle
barbarian
barbecue
barnacle
bizarre
blase
bloodshot
bonbon
botanist
bother
botulism
brocoli
buckshot
farmyard
farthing
follicle
fontanel
fossil
garbage
gardenia

globule
goblet
godfather
gondolier
gospel
guitar
harlequin
harpoon
hearth
helicopter
histrionic
hockey
hodgepodge
homologous
homonym
hypocrisy
laconic
llama
lobster
lockjaw
lollipop
Mardi gras
margarine
marmalade
marquee
matriarch
misconduct
moccasin
modulate
molecule
monotonous
neon
nodule
nonprofit
monolith
monopoly
noturne
noncooperative
nonprotestant
monastery
monogamist
monument
narcotic
neutron
nonchalance
nonintoxicant
parafit
parquet
particle
pawnshop

peacock
pecan
pentagon
philosopher
phosphorous
plutonic
polygon
polyphonic
pontoon
postulate
preponderance
prodigy
progeny
propagate
prosecute
proximity
radiology
reconnaissance
sarcophagus
sardonic
Scotch
selfconscious
sharpshooter
shuttlecock
slingshot
soccer
solitary
soluble
sophomore
squander
starch
starvation
stockyard
suave
synopsis
tarpon
telescopic
throttle
vanguard
vivace
vodka
wampum
whereon
yacht
departure
deposit
dishonor
docile
opposition
swallow

Unit XV Word Lists

alibi
acquire
typewriter
pulverize
shrine
termite
stratify
absent-minded
baptize
vitamin
politely
hibernate
tripod
microphone
maestro
idea
memorize
client
pliers
micrometer
nineteen
bicuspid
homogenize
rifle
python
identify
buyer
dialogue
ostracize
diarrhea
hydrogen
gynecology
horizon
nitrogen
personify
multiply
tricycle
triumvirate
triumph
gyroscope
myopic
seismograph
realize
materialize
beautify
violent
virus
triangle
harmonize
violin

abound
ground
pout
power
wound
house
bountiful
tower
shower
pouch
founder
mountain
thousand
hound
mouth
pronoun
astounding
pow-wow
spouse
ouch
powder
foundation
bounty
down-town
compound
downfall
announces
coward
hour
blouse
frown
chow-mein
brownie
gout
stout
slouch
goudge
endow
surround
confound
pronounce
cloud
vow
trousers
countess
spout
couch
shroud
drout
scout

join
cloister
toilet
joyous
purloin
hoist
point
poignancy
typhoid
trapezoid
employed
loiter
joint
ointment
groin
oyster
toil
poison
sirloin
enjoy
moist
poinsetta
soil
boisterous
asteroid
goiter
toy
foyer
flambuoyance
choice
coin
ahoy
alloy
turmoil
envoy
invoice
moisture
Mongoloid
destroyer
exploit
decoy
cloy
annoyance
thyroid
embroider
avoid
joist
noisome
spoil
voyage

Unit XVI Word Lists

wherewithal
cobalt
noblesse oblige
Milwaukee
bean jeste
abroad
procedure
allomorph
allotrope
altercation
Anglo Saxon
audible
aurora borealis
booklore
bulldoze
calypso
catalogue
cautious
chocolate
coherence
coordination
corrugated
dextrose
dogma
opaque
ordeal
enthrall
extrovert
foothold
forlorn
ghetto
gorge
haunch
placebo
porpoise
arthritis
artificial
biography
bobwhite
domicile
apologize
archdiocese
armature
gargoyle
harmonize
micrometer
noncompliance
peroxide
teleological
theology

volume
dioxide
iron
stylized
connivance
rectify
saliva
dialect
striate
violet
gaucho
streusel
nucleoid
guzzle
turbulent
champion
shambles
shenanigan
sheriff
shrivel
abrogation
adulteration
appreciate
bumptious
depreciation
Asiatic
sphinxes
languer
crinkle
dinghy
peering
minx
plankton
scampering
truncate
Hindustan
singularity
bivouac
avuncular
irregular
deglutinate
conjunctivitis
triphthong
mongrel
microbiology
formaldehyde
congenial
substitute
myopic
axiomatic

constrictor
couch
polaroid
daring
outstanding
pomology
mechanized
foliage
autosuggestion
workout
centrifuge
surrealism
manganese
vegetarian
diabetes
countersign
changeable
womankind
thrombosis
badinage
valuable
mayonnaise
surgeon
Mediteranean
bilingual
poison
counterpoint
threaten
coupon
psychopath
shouted
jury
juncture
knighthood
psychopathy
prestidigitator
charioteer
propitiate
purist
primeval
wheelchair
uralogy
turpitude
sanguine
counterclockwise
uncouth
acquiese
garage
whimsical
trapezoid

APPENDIX B

Instruction for Language Master users
(for automated ear training in connection with Speech 312, "Phonetics")

1. The machine is "On" from the moment the cord is plugged into the source of electricity. ALWAYS <u>disconnect</u> from socket when leaving the machine.

2. For routine transcription practice:

   a. Plug into source of electricity.
   b. Be sure the recording light (on left side of top of machine, just above the "Listen-Record" lever) is NOT <u>on</u>.
      If "on", turn off by means of the "Instructor's Switch" located in the back "well" of the machine, just ahead of the outlet for the cord.
   c. See that the "Student-Instructor" lever (top center) is depressed on the right (Instructor) side.
   d. Insert cards in the right hand side of the card slot (Cards must be flush with the bottom of the card slot). Move card to left until the feed roller contacts and transports the card.
   e. Insert headphone jack into outlet provided on top (right, front) of machine.
   f. Adjust volume to suit your needs.

3. To compare own voice with "Instructor": (Please complete initial practice with extra practice cards before using any of the boxed units):

   a. Plug into source of electricity and insert headphone jack into outlet on top of machine.
   b. Depress "Student-Instructor" lever on the left (Student) side. ALWAYS DO THIS STEP BEFORE THE FOLLOWING!!
   c. Turn on recording light (in back "well" on the left side).
   d. Insert card. After feed roller begins to transport the card, speak into the microphone (perforated front center of machine), <u>simultaneously</u> holding left lever on "Record" position. Find appropriate volume level (or nearness to mike) upon successive replays. Preferred position is with white indicator straight up. NEVER record at or near maximum volume.
   e. For replay:
      (1) <u>Turn off recording light</u>.
      (2) Permit record lever to return to "Listen" position.
      (3) Play back both channels serially by depressing "Instructor" prior to first card-run, and "Student" prior to second card-run."

<u>NEVER</u> use the burning Recording Light in conjunction with the "Record" position of lever while the "Instructor" lever is depressed!!!

ALWAYS <u>disconnect</u> from socket when leaving the machine!!!

ALWAYS record your study time on the Clip-Board Timetable!!!

APPENDIX C - Satisfaction Scale

INTRODUCTION TO PHONETICS: Evaluation

Basic Information: Fill in appropriate blanks:

Date: _____, 196___.
(Month-Day)

Age, in years, on last birthday: _____

Sex: _____Male _____Female

Is this a required course? _____Yes _____No

Were you a member of the machine group? _____Yes _____No

Course "Satisfaction" Scale

Answer questions 1-10 on an "A" to "E" basis: "A" is the highest, or best evaluation, "E" is the lowest, or poorest evaluation. Answer every question by inserting a check in the appropriate column:

A - Very satisfactory
B - Fairly satisfactory
C - Neutral in satisfaction
D - Fairly unsatisfactory
E - Very unsatisfactory

	A	B	C	D	E
1. In general, as a means of reaching educational goals, I find studying by oneself to be:					
2. As a means of meeting course-objectives in general, I think self-operated electronic teaching aids are:					
3. I think the use of ear-phones in learning sessions is:					
4. As a means of learning phonetic transcription skills, I think the Language Master technique is:					

	A	B	C	D	E
5. During my transcription practice I found the clarity of articulation (of instructor in classroom, OR of stimuli on Language Master cards) to be:					
6. During my transcription practice, I found the variety (or lack thereof) of dictation stimuli (instructor OR different voices on Language Master cards) to be:					
7. I found the method of checking my transcription practice accuracy (instructor in "Split-Class" classroom periods OR transcription on reverse of Language Master cards) to be:					
8. During my transcription practice, I found verbal imitation of the stimulus (and comparing student-channel with instructor-channel in Language Lab OR receiving instructor-reaction to classroom verbal imitation) to be:					
9. With respect to meeting the transcription demands of the phonetics course, I found the amount of available transcription practice time OR Language Lab ACCESS time to be:					
10. I found the interrrelationship of the timetable scheduling of classroom transcription sessions (or release time for Lab) and other classroom activities to be:					

	A	B	C	D	E
Answer questions 11 and 12 on an "A" to "E" basis using the following interpretation of the letters: A - Very high B - High C - Average D - Low E - Very low					
11. At the beginning of this course, my motivation level with respect to phonetic transcription was:					
12. At the end of this course, my motivation level with respect to phonetic transcription is:					

Remaining questions are to be answered by checking, completing, or writing short answers (in outline form, if possible):

13. With my present knowledge about mastering the transcription elements of the phonetics course, if I could begin all over again, I would choose the

_____ (a) Instructor classroom transcription technique

_____ (b) Language Master technique in the Language Lab.

14. At the beginning of this course (hence, without the semester's insight gained through trying to learn phonetic transcription) when the class was divided into two groups for Language Laboratory OR Classroom Dictation purposes, if I would have been permitted to choose between the two learning techniques, I would have chosen the

_____ (a) Instructor Classroom transcription technique

_____ (b) Language Master technique in the Language Lab.

15. (a)
If your preferred option (Lab vs Classroom dictation) remains the same now as at the beginning of the course, please state the reasons why:

OR
(b)
If your preferred option has changed between the beginning and end of this course, please state the reasons why:

16. Please record all other reactions (positive and negative) to the system of dictation practice made available to you, in order to help in evaluating the particular method (Language Lab or Classroom Dictation) of teaching phonetic transcription:

17. Do you feel that your reactions to your transcription practice technique (Language Lab or Classroom dictation) are unduly influenced either positively or negatively by the experiences or the opinions of other students, faculty, friends, etc.? Explain.

18. Is this course required in your major? ____ Yes ____ No

19. Is this course required in your minor? ____ Yes ____ No

20. Indicate by a check the field in which you are majoring:

_____ Speech Correction

_____ General Speech

_____ Radio & Television

_____ Communication & Public Address

_____ Deaf Education

_____ Elementary Education

_____ Other: Please write in your field _____

21. Indicate by a check the field in which you are minoring:

_____ Speech Correction

_____ General Speech

_____ Radio & Television

_____ Communication & Public Address

_____ Deaf Education

_____ Elementary Education

_____ Other: Please write in your field _____.

22. Your All-University grade point average at the beginning of the current semester (indicate to 2 decimal points):

_____

23. If this course was not required, your reason for taking it was:

(a) Needed to complete total number of necessary credits. _____ Yes _____ No

(b) Sounded interesting. _____ Yes _____ No

(c) Knowledge of instructor. _____ Yes _____ No

(d) Knowledge of experimental Language Laboratory technique being used. _____ Yes _____ No

(e) Recommended by advisor. _____ Yes _____ No

(f) Recommended by friends. _____ Yes _____ No

(g) Other reasons (Please state): _____.

GRADE DATA: Means, Standard Deviations, Correlations

		SEX	GPA	MLN2	TITR	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TRAV	TH1	TH2
	Mn	1.296	2.437	1.509	430.2	75.41	74.65	76.04	61.16	77.47	79.53	57.55	71.76	71.62	60.28
	s	.458	.495	.501	204.5	18.78	19.30	21.20	20.15	18.96	20.04	22.47	17.02	14.40	15.29
Grade point av.	GPA	-.107													
	MLN2	-.054	.048												
	TITR	-.028	.157	-.024											
	TR1	-.122	.315	-.082	-.075										
	TR2	-.207	.320	.015	.036	.699									
	TR3	-.182	.337	.112	.086	.591	.708								
	TR4	-.069	.349	.047	.062	.596	.670	.769							
	TR5	-.087	.304	.036	.147	.570	.667	.713	.702						
	TR6	-.084	.246	-.054	.200	.575	.629	.708	.614	.718					
	TR7	.025	.351	-.012	.084	.602	.666	.700	.700	.572	.658				
	TRAV	-.120	.379	.012	.093	.780	.852	.885	.860	.836	.832	.839			
	TH1	-.219	.340	-.075	.160	.235	.364	.280	.220	.346	.354	.297	.353		
	TH2	-.119	.441	.028	.155	.229	.293	.370	.382	.344	.322	.384	.396	.544	
	TH3	-.117	.453	.020	.102	.269	.411	.361	.394	.430	.399	.407	.450	.651	.610
	THAV	-.183	.475	-.016	.169	.280	.403	.388	.378	.426	.405	.415	.456	.860	.866
	PITC	.164	.172	-.082	-.209	.240	.286	.199	.255	.314	.241	.245	.302	.106	-.016
	LOUD	.123	.120	.163	-.018	.048	.001	.070	.075	-.004	.010	.017	.038	-.066	-.028
	RHYM	.043	-.053	-.117	-.027	.115	.104	.027	.057	.031	.067	.116	.087	.156	.071
	TIME	.157	.262	.072	.026	.183	.224	.271	.252	.272	.200	.215	.274	.200	.174
	TBRE	.080	.043	.032	-.097	.268	.293	.329	.309	.218	.243	.303	.333	.109	.175
	TORM	.001	.154	.094	-.019	.254	.341	.255	.253	.213	.207	.207	.294	.067	.108
	REQ+	.032	-.070	-.189	.136	.103	.020	.054	.137	.107	.165	.153	.125	.082	.128
	SPCR	-.287	-.112	-.112	.085	.188	.124	.169	.188	.167	.176	.158	.197	.177	.137
	G-SP	.319	.022	.031	.034	-.129	-.115	-.082	-.001	-.028	-.031	-.047	-.072	-.071	-.087
	RTV	.378	-.195	-.032	-.137	-.014	-.109	-.096	-.136	-.068	-.050	-/028	-.086	-.213	-.178
	CPA	-.052	-.067	.078	.008	-.235	-.205	-.173	-.203	-.263	-.237	-.169	-.247	-.070	-.012
	DEAF	-.217	.143	-.132	.093	.115	.114	.017	.080	.021	.074	.116	.090	.073	.215
	ELED	-.122	.031	.119	-.012	-.191	-.169	-.142	-.225	-.142	-.161	-.247	-.218	-.003	-.029
	OTHR	-.008	.091	.107	-.109	.026	.109	.069	-.003	.014	-.033	-.001	.032	-.029	-.086

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GRADE DATA: Means, Standard Deviations, Correlations

	TH3	THAV	PITC	LOUD	RHYM	TIME	TBRE	TONM	REQ+	SPCR	G-SP	RTV	CPA	DEAF
Mn	76.63	69.39	42.50	42.71	27.44	39.96	39.40	25.55	1.679	1.258	1.270	1.057	1.006	1.101
s	8.667	10.99	5.269	3.207	2.972	4.506	4.705	3.734	.468	.439	.446	.232	.079	.302
THAV	.834													
PITC	.163	.082												
LOUD	-.027	-.050	.108											
RHYM	.128	.137	.095	-.111										
TIME	.175	.211	.336	.078	-.027									
TBRE	.184	.178	.299	.107	.141	.239								
TONM	.147	.118	.435	.002	.195	.294	.287							
REQ+	.150	.135	.021	-.079	.016	-.088	.087	-.156						
SPCR	.107	.171	.007	-.122	.029	-.010	.134	.033	.405					
G-SP	-.002	-.075	.010	.104	-.081	-.038	-.091	-.223	.418	-.359				
RTV	-.010	-.203	.101	.056	-.036	.031	.034	.022	.052	-.144	-.149			
CPA	-.089	-.061	-.114	.007	-.119	-.052	-.092	.010	.055	-.047	-.048	-.019		
DEAF	.150	.175	-.048	-.120	.183	-.048	.074	.052	.230	-.197	-.204	-.032	-.027	
ELED	-.023	-.023	-.111	.017	-.041	-.080	-.150	.013	-.397	-.161	-.166	-.067	-.022	-.091
OTHR	-.130	-.086	.048	.060	-.009	.114	-.035	.139	-.816	-.330	-.341	-.137	-.045	-.187

	ELED	OTHR
Mn	1.069	1.239
s	.255	.428
OTHR	-.153	

GRADE DATA
KEY

SEX	Sex
GPA	Grade point average
MIN2	Machine (1)-Non Machine (2)
TITR	Time spent in Transcription Practice
TR1	Transcription Test 1
TR2	Transcription Test 2
TR3	Transcription Test 3
TR4	Transcription Test 4
TR5	Transcription Test 5
TR6	Transcription Test 6
TR7	Transcription Test 7
TRAV	Transcription Tests Average
TH1	Theory Test 1
TH2	Theory Test 2
TH3	Theory Test 3
THAV	Theory Tests Average
PITC	Seashore Pitch subtest
LOUD	Seashore Loudness subtest
RHYM	Seashore Rhythm subtest
TIME	Seashore Time subtest
TBRE	Seashore Timbre subtest
TORM	Seashore Tonal Memory subtest
REQ+	Required for major
SPCR	Speech Correction major
G-SP	General Speech major
RTV	Radio and Television major
CPA	Communication and Public Address major
DEAF	Deaf Education major
ELED	Elementary Education major
OTHR	Other major

QUESTIONNAIRE DATA: Means, Standard Deviations, Correlations

	SEX	AGE	GPA	MLN2	SAT1	SAT2	SAT3	SAT4	SAT5	SAT6	SAT7	SAT8	SAT9	SA10
Mn	1.285	21.17	2.541	1.528	3.875	3.215	3.181	3.306	3.792	3.569	4.083	3.674	3.750	3.889
s	.453	4.86	.428	.501	.860	1.039	.987	1.066	1.188	1.120	1.041	1.053	1.226	.976
AGE	.035													
GPA	-.146	.289												
MLN2	-.020	.017	.058											
SAT1	-.159	.014	.184	.073										
SAT2	.121	.016	.186	.009	.132									
SAT3	.088	.028	.200	.060	.060	.617								
SAT4	.065	.007	.053	-.147	.111	.729	.525							
SAT5	-.149	.089	.005	.586	.050	.088	.104	.067						
SAT6	-.005	.121	.141	.308	.074	.026	.052	.047	.411					
SAT7	-.036	-.031	.075	.049	.066	.210	.251	.330	.223	.253				
SAT8	-.036	.035	.120	.427	.027	.054	.094	-.084	.458	.338	.342			
SAT9	-.085	-.053	.087	-.114	.149	.196	.199	.294	.132	.176	.351	.081		
SA10	.040	.053	.048	.064	.108	.169	.050	.174	.233	.282	.133	.137	.503	
SA11	-.111	.031	.087	-.157	-.062	-.164	.043	-.015	-.008	-.065	-.082	-.012	.130	.000
SA12	.161	.067	-.033	.052	.139	.129	.121	.164	.133	.211	.218	.123	.259	.298
SAAV	-.020	.107	.196	.205	.304	.518	.531	.572	.528	.505	.570	.444	.593	.523
PRCH	.011	-.126	.039	-.305	.052	.536	.230	.476	-.187	-.110	-.071	-.201	-.024	.081
PACH	.113	-.080	-.052	-.020	.002	.240	.260	.224	-.136	-.143	-.095	-.095	-.098	-.007
REQ+	.008	-.086	-.105	.021	-.007	-.070	-.034	-.027	-.012	.020	-.050	-.060	-.034	.050
SPCR	-.262	-.102	-.126	-.112	.038	-.012	.025	.036	-.032	-.088	.068	.008	.066	-.007
G-SP	.224	-.065	-.035	.119	-.226	-.098	-.049	-.135	-.055	.003	-.125	-.087	-.081	.016
RTV	.367	-.021	-.125	.034	.015	.010	.047	.032	.032	-.064	.024	-.056	-.103	-.043
CPA	.022	.222	.112	.058	.112	.024	.032	-.027	-.139	.049	.050	.094	.071	.095
DEAF	-.207	-.021	.139	-.112	.048	.045	-.036	.082	.038	.106	-.049	-.038	.010	-.011
ELED	-.145	-.111	.001	.055	.018	.005	-.058	-.045	.158	.078	.068	.138	-.094	-.163
OTHR	.070	.171	.099	-.004	.058	.050	.038	.051	-.005	-.018	-.011	-.004	.096	.095
REQ-	-.086	-.043	.060	-.081	-.040	.011	-.047	.006	.019	-.004	.069	.011	.004	-.174
SCR-	-.120	.040	-.003	-.049	-.105	-.003	-.189	-.055	.001	.107	.058	.055	-.054	-.017
GSP-	.071	-.049	-.026	-.064	-.026	.055	-.042	.023	-.050	-.062	.035	.019	-.036	-.141
RTV-	-.053	-.038	-.047	.079	-.085	-.179	-.015	-.181	.085	.032	.074	.024	.017	-.076

QUESTIONNAIRE DATA: Means, Standard Deviations, Correlations

	SEX	AGE	CPA	MIN2	SAT1	SAT2	SAT3	SAT4	SAT5	SAT6	SAT7	SAT8	SAT9	SA10
CPA-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEF-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ELE-	-.052	.032	.039	.079	-.085	.063	.070	.055	.015	-.118	-.007	.104	-.120	-.162
OTH-	.034	.028	-.002	.025	.109	-.015	.120	.041	0.000	-.006	-.090	-.095	.076	.160

	SA11	SA12	SAAV	PRCH	PACH	REQ+	SPCR	G-SP	RTV	CPA	DEAF	ELED	OTHR	REQ-
Mn	3.688	3.750	3.650	1.333	1.285	1.701	1.285	1.181	1.083	1.042	1.097	1.090	1.222	1.174
s	1.000	1.081	5.110	.473	.453	.459	.453	.386	.277	.201	.297	.288	.417	.380
SA12	-.034													
SAAV	.127	.481												
PRCH	-.030	-.096	.087											
PACH	.013	-.011	.011	.370										
REQ+	-.052	-.067	-.085	-.021	.073									
SPCR	.013	-.054	-.002	.044	.045	.412								
G-SP	.039	-.059	-.152	-.140	-.096	.306	-.296							
RTV	-.132	-.047	-.049	.053	.144	.142	-.190	-.142						
CPA	-.109	.048	.034	-.074	-.055	.060	-.132	-.098	-.063					
DEAF	.103	.054	.055	.116	.053	.214	-.207	-.154	-.099	-.068				
ELED	-.047	-.084	.002	-.017	-.038	-.430	-.199	-.148	-.095	-.066	-.103			
OTHR	.050	.140	.118	.012	-.041	-.710	-.337	-.251	-.161	-.111	-.175	-.168		
REQ-	-.003	.004	-.016	.065	-.086	-.342	-.249	-.215	-.138	-.096	.345	.112	.284	
SCR-	.059	.009	-.019	.027	-.120	.124	-.120	-.089	-.057	-.040	.578	-.060	-.101	.414
GSP-	-.111	-.062	-.065	.078	-.027	-.542	-.223	-.166	-.107	-.074	-.116	.274	.396	.655
RTV-	.110	-.058	-.041	-.059	-.053	.055	.133	-.039	-.025	-.017	-.027	-.026	-.045	.182
CPA-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEF-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.000	0.000	0.000	0.000	0.000	0.000
ELE-	.110	-.214	-.057	.118	-.053	.055	.133	-.039	-.025	-.017	-.027	-.026	-.045	-.038
OTH-	.009	.104	.066	-.079	.117	.400	.120	.210	.135	.093	-.168	-.249	-.254	-.779

QUESTIONNAIRE DATA: Means, Standard Deviations, Correlations

	SCR-	GSP-	RTV-	CPA-	DEF-	ELE-	OTH-
Mn	1.035	1.111	1.007	1.000	1.000	1.007	1.833
s	.184	.315	.083	.000	.000	.083	.374
GSP-	-.067						
RTV-	-.016	-.030					
CPA-	0.000	0.000	0.000				
DEF-	0.000	0.000	0.000	0.000			
ELE-	-.016	-.030	-.007	0.000	0.000		
OTH-	-.424	-.791	-.187	0.000	0.000	-.187	

QUESTIONNAIRE DATA
KEY

SEX	Sex
AGE	Age
GPA	Grade point average
MIN2	Machine (1)-Non Machine (2)
SAT1	Satisfaction Score 1
SAT2	Satisfaction Score 2
SAT3	Satisfaction Score 3
SAT4	Satisfaction Score 4
SAT5	Satisfaction Score 5
SAT6	Satisfaction Score 6
SAT7	Satisfaction Score 7
SAT8	Satisfaction Score 8
SAT9	Satisfaction Score 9
SA10	Satisfaction Score 10
SA11	Satisfaction Score 11
SA12	Satisfaction Score 12
SAAV	Satisfaction Scores Average
PRCH	Teaching technique choice--Present knowledge
PACH	Teaching technique choice--At beginning of course
REQ+	Required for major
SPCR	Speech Correction major
G-SP	General Speech major
RTV	Radio and Television major
CPA	Communication and Public Address major
DEAF	Deaf Education major
ELED	Elementary Education major
OTHR	Other major
REQ-	Required for minor
SCR-	Speech Correction minor
GSP-	General Speech minor
RTV-	Radio and Television minor
CPA-	Communication and Public Address minor
DEF-	Deaf Education minor
ELE-	Elementary Education minor
OTH-	Other minor